APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/478,682	01/06/2000	ADAM K. KOLAWA	36463/RRT/P3	1994

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CHRISTIE, PARKER & HALE, LLP
350 WEST COLORADO BOULEVARD
SUITE 500
PASADENA, CA 91105

EXAMINER
VO, TED T

ART UNIT	PAPER NUMBER
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DATE MAILED: 10/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _26 September 2003_ .

2a) ☒ This action is **FINAL.**   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-37_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1-37_ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: .

DETAILED ACTION

1.   This action is in response to the communication filed on 09/26/2003. The claims based on this

communication are in the amendment which is filed on 05/05/2003. This amendment was made final and

mailed on 7/17/03.

Regarding applicants' arguments of the communication filed on 09/26/03, the final rejection

mailed on 7/17/03 is withdrawn. Claims 1-37 remain pending in the application.

Applicants' arguments of the communication filed on 09/26/03 (Response to Final Office Action

(RTFOA)) for that the reference does not teach parsing the source code of the computer program to

identify functions in the source code as required by the independent claims 1, 19, 32, 37 has been

considered.

Applicants' arguments are based on the point that the reference's input for parsing is not a source

code (given by the applicants' arguments as a whole in the RTFOA and applicants' limitation highlights in

the RTFOA, page 2, 5-11).

The arguments are moot in view of a new ground of rejection. The amendment of claims 1-37

filed on 05/05/03 necessitated the new ground of rejection presented in this office action.

Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of

the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the

mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of

this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened

statutory period, then the shortened statutory period will expire on the date the advisory action is mailed,

and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the

advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS

from the date of this final action.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

A person shall be entitled to a patent unless –

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

(a) Claims 1-14, 19-27, 32-35, 37 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Cline (US No. 5,313,616)

As per claim 1:

Cline teaching includes a method which scans the input source text and identifies procedure calls for

generating stubs (see column 16, lines 29-34). The teaching of Cline covers claim limitation:

"A method for testing a computer comprising the step of:

parsing a source code of the computer program to identified functions in the source code (see

column 16, lines 14-34, 'scans the input source text for procedure calls', and 'make a list of all of the calls

by location and target'); *responsive to the identified functions, generating stubs for the source code*

(see column 16, lines 35-40); *instrumenting the parsed source code with the generated stubs* (see

column 16, lines 35-40, and see column 17, lines 56-61); *compiling the instrumented code; testing*

the compiled code; and reporting test results (see Fig.13, feature 70, see column 17, lines 56-61, see

column 19, lines 43-50)";

Cline addresses a testing that parses and identifies the procedure calls and generating the stubs

from the input source text (see column 16, lines 29-34). Cline converts the instrumentation with stubs into

binary code (see Fig.13, feature 70, see column 17, lines 56-61, see column 19, lines 43-50), for testing

the input code.

Cline does not address the source text as source code. However, the difference is the type of inputs implemented in a similar method. The similar method is a stub is generated at a file that is human readable/modifiable before converting into a form that is not human modifiable. Source code is known as modifiable code that allows a user can change/correct before compilation. In many aspects, compiled code is in binary form which can't be modifiable. In some aspect, compiled code is in form of assembly language. The code text or object module in the reference that is input to a parser for identifying procedure calls then generating stubs is human readable. This code is also modifiable and compiled once into executable binary form (column 19, lines 43-45). It's obvious that a programmer in both cases (claimed recitation and reference) conform with a common standard by taking advantage of the readable and modifiable form to generate and to instrument the code before it becomes another form that is hard for user's view.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention was made to implement the teaching of Cline for generating stubs at source text in debugging the object code module formed in assembly language into the similar manner of a source program. Doing so would conform to a common standard by taking advantage of the readable and modifiable form to generate and to instrument the code before it becomes another form that is hard from user modification.

As per claim 2:

Regarding claim 2, Cline teaches inherently the claim's step for generating stubs in the teaching of converting the call instructions (column 18, lines 22-26)

As per claim 3:

Regarding claim 3, Cline teaches inherently the claim's specific functions in the teaching of converting call instructions to call stub locations (column 18, lines 22-26).

As per claim 4:

Regarding claim 4, Cline teaches inherently the claim's step for generating stubs automatically in the teaching of using of DBV (column 15, lines 42-49).

As per claim 5:

Regarding claim 5, Cline teaches claim's feature for automatically generating arguments to the functions and automatically initializing class member inherently in the teaching of changing instruction branch (column 18, lines 24-27, lines 42-52).

As per claim 6:

Regarding claim 6, Cline teaches inherently the user-specified functions by showing a user procedure stub of table 6 (column 17).

As per claim 7:

Regarding claim 6, GUI is a part of computer system, Cline teaches inherently the claim in static analysis (see abstract).

As per claim 8:

Regarding claim 8, Cline teaches inherently the claim in the teaching of making a list of all of the calls by location and target (see column 16, lines 35-40, or see figure 5).

As per claim 9:

Regarding claim 9, the Cline's teaching of procedure calls has means of name space, class, function, and objects.

As per claims 10-11:

Regarding claim limitation of claims 10-11, the claims are inherent from the definition of a stub, where a stub is only a routine that is not functionally related to the routine of the source program.

As per claim 12:

Regarding claim 12, Cline teaches inherently the claim in maintaining a list of all of the calls by location and target (see column 16, lines 35-40, or see figure 5).

As per claim 13:

Regarding claim 13: Cline teaches monitoring test coverage of application programs (see column 2, lines 58-60, and figure 12) in using the SBV (see description of SBV, column 9, started from line 43 to column 11 line 62).

As per claim 14:

Regarding claim 14: Cline discloses the SBV as a tool that has means for testing, monitoring and display (see description of SBV, column 9, started from line 43 to column 11 line 62). SBV has means of providing GUI.

As per claim 19:

Claim 19 has claimed functionality corresponding to the claimed functionality of claim 1. Claim 19 is rejected in the same reason set forth in connecting to the rejection of claim 1.

As per claim 20:

Claim 20 has claimed functionality corresponding to the claimed functionality of claims 8-9. Claim 20 is rejected in the same reason set forth in connecting to the rejections of claims 8-9.

As per claim 21:

Claim 21 has claimed functionality corresponding to the claimed functionality of claim 2. Claim 21 is rejected in the same reason set forth in connecting to the rejection of claim 2.

As per claim 22:

Claim 22 has claimed functionality corresponding to the claimed functionality of claim 3. Claim 22 is rejected in the same reason set forth in connecting to the rejection of claim 3.

As per claim 23:

Claim 23 has claimed functionality corresponding to the claimed functionality of claim 4. Claim 23 is rejected in the same reason set forth in connecting to the rejection of claim 4.

As per claim 24:

Claim 24 has claimed functionality corresponding to the claimed functionality of claim 5. Claim 24 is rejected in the same reason set forth in connecting to the rejection of claim 5.

As per claim 25:

Claim 25 has claimed functionality corresponding to the claimed functionality of claim 6. Claim 25 is rejected in the same reason set forth in connecting to the rejection of claim 6.

As per claim 26:

Claim 26 has claimed functionality corresponding to the claimed functionality of claim 13. Claim 26 is

rejected in the same reason set forth in connecting to the rejection of claim 13.

As per claim 27:

Claim 27 has claimed functionality corresponding to the claimed functionality of claim 14. Claim 27 is

rejected in the same reason set forth in connecting to the rejection of claim 14.

As per claim 32:

Claim 32 has claimed functionality corresponding to the claimed functionality of claim 1. Claim 32 is

rejected in the same reason set forth in connecting to the rejection of claim 1.

As per claim 33:

Claim 33 has claimed functionality corresponding to the claimed functionality of claim 2. Claim 33 is

rejected in the same reason set forth in connecting to the rejection of claim 2.

As per claim 34:

Claim 34 has claimed functionality corresponding to the claimed functionality of claims 8-9. Claim 34 is

rejected in the same reason set forth in connecting to the rejection of claims 8-9.

As per claim 35:

Claim 35 has claimed functionality corresponding to the claimed functionality of claim 13. Claim 35 is

rejected in the same reason set forth in connecting to the rejection of claim 13.

As per claim 37:

Claim 37 has claimed functionality corresponding to the claimed functionality of claim 1. Claim 37 is

rejected in the same reason set forth in connecting to the rejection of claim 1.

(b) Claims 15, 28, 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cline (US

No. 5,313,616) in view of Beizer, "Software Testing Techniques", 1986.

As per claim 15:

Regarding to claim limitation of claim 15, Cline teaches program testing in the manner of the claim 1 as

specified above by identifying all call instructions in an application program (see column 16, lines 14-34)

and generating stubs and compiling the instrumented application program (see column 16, lines 35-40, column 17, lines 56-61).

Cline does not explicitly mention its program testing comprising steps for defining a specific behavior when a procedure within the source code of the program is called by storing defined information; compiling defined information as a separated object; and linking the compiled object to the code (claimed limitation: '*defining a specific behavior when a function within the source code is called; storing the defined information; compiling the defined information as a separated object; and linking the compiled object to the code*').

Beizer teaches a basic testing technique in software testing. Beizer teaches that a program behavior is complicated and very hard to understand (section 3.4, page 11). Therefore, it requires building a program model independently (*defined information as a separated object*) from the program to represent the program behavior. It teaches running the built model (*compiling* and *linking*) in order to understand the behavior of the program, and thus it can modify the program (see figure 1-1, page 10). The program model is separated from the program and is run for testing.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention was made to include the teaching of generating program model of Beizer, with the program application testing of Cline. Doing so would conform to the testing standard in which it provides a separated behavior model. This standard is used commonly in software testing.

As per claim 28:

Claim 28, which is further limitation of claims 19, has claimed functionality corresponding to the claimed functionality of claim 15. Claim 28 is rejected in the same reason set forth in connecting to the rejection of claim 15.

As per claim 36:

Claim 36, which is further limitation of claims 32, has claimed functionality corresponding to the claimed functionality of claim 15. Claim 36 is rejected in the same reason set forth in connecting to the rejection of claim 15.

(c) Claims 16-18, 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cline

(US No. 5,313,616).

As per claims 16-18:

Regarding to claim limitation of claims 16-18, Cline teaches program testing in the manner of the claim 1

as specified above by identifying all call instructions in an application program (see column 16, lines 14-

34) and generating stubs and compiling the instrumented application program (see column 16, lines 35-

40, column 17, lines 56-61).

Cline does not explicitly mention its program testing comprising white-box test, black-box test, and

regression test.

Official notice is taken that White-box test, black-box test and regression test are the well-known testing

techniques in the testing art. Each kind of these tests is inherent from functional testing or structure

testing of the program (Beizer, mentioned herein as a prior art of record, views the black-box testing is

functional testing; Beizer, page 4, last paragraph; and views the testing as of user objectives).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention was

made to include each common testing technique at a point's of interest. Doing so would take advantage

of all well-known testing techniques for conforming to standards of functional testing at points' of interest.

As per claims 29-31:

Claims 29-31, which are further limitation of claims 19, have claimed functionality corresponding to the

claimed functionality of claims 16-18 respectively. Claims 29-31 are rejected in the same reason set forth

in connecting to the rejection of claims 16-18.

Conclusion

3.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

        Auerbach et al., " Mockingbird: Flexible Stub Compilation from Pairs of Declarations ", IEEE, pp.

393-402, June 1999.

Any inquiry concerning this communication or earlier communications from the examiner should

be directed to Ted T. Vo whose telephone number is (703) 308-9049. The examiner can normally be

reached on Monday-Friday from 8:00 AM to 5:30 PM ET. If attempts to reach the examiner by telephone

are unsuccessful, the examiner's supervisor, Tuan Dam, can be reached on (703) 305-4552.

The fax phone numbers for this Group are:

Official: (703) 746-7239;

After Final: (703) 746-7238;

Non-Official: (703) 746-7240.

Any inquiry of a general nature or relating to the status of this application or proceeding should be

directed to the Group receptionist whose telephone number is (703) 305-3900.

TUAN DAM
SUPERVISORY PATENT EXAMINER

TTV
October 14, 2003